DOCUMENT RESUME

ED 228 822 EC 151 680

AUTHOR Thurlow, Martha L.; And Others
TITLE LD Students' Active Academic Responding in Regular and Resource Classrooms.
INSTITUTION Minnesota Univ., Minneapolis. Inst. for Research on Learning Disabilities.
SPONS AGENCY Office of Special Education and Rehabilitative Services (ED), Washington, DC.
REPORT NO IRLD-RR-90
PUB DATE Sep 82
CONTRACT 300-80-0622
NOTE 62p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Elementary Education; *Learning Disabilities; *Mainstreaming; *Resource Room Programs; Student Characteristics; *Time on Task

ABSTRACT

Sixteen elementary students were observed systematically over 2 entire school days to examine the nature of instruction and academic responding times for elementary learning disabled (LD) students during resource room and mainstream classroom instruction. Data were recorded on six categories in 10 second intervals. Results indicated that in the mainstream setting the nature of instruction and academic responding was similar for LD Ss and their nonLD classmates. However, LD Ss received more small group instruction and more teacher approval in the resource room than in the mainstream room, and also engaged in three of seven active academic responses for more time when in the resource room. Yet, overall active academic responding time was low, even in the resource room, averaging just over 29 minutes of a 95 minute time period. (Author/CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED228822

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

University of Minnesota

Research Report No. 90

LD STUDENTS' ACTIVE ACADEMIC RESPONDING IN REGULAR AND RESOURCE CLASSROOMS

Martha L. Thurlow, James E. Ysseldyke, and Janet L. Graden

IRLD

Institute for Research on Learning Disabilities

EC151680

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
J. Ysseldyke
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IRLD

Director: James E. Ysseldyke

The Institute for Research on Learning Disabilities is supported by a contract (300-80-0622) with the Office of Special Education, Department of Education, through Title VI-G of Public Law 91-230. Institute investigators are conducting research on the assessment/decision-making/intervention process as it relates to learning disabled students.

During 1980-1983, Institute research focuses on four major areas:

- Referral
- Identification/Classification
- Intervention Planning and Progress Evaluation
- Outcome Evaluation

Additional information on the Institute's research objectives and activities may be obtained by writing to the Editor at the Institute (see Publications list for address).

The research reported herein was conducted under government sponsorship. Contractors are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent the official position of the Office of Special Education.

Research Report No. 90

LD STUDENTS' ACTIVE ACADEMIC RESPONDING IN REGULAR AND RESOURCE CLASSROOMS

Martha L. Thurlow, James E. Ysseldyke, and Janet L. Graden

Institute for Research on Learning Disabilities

University of Minnesota

September, 1982

Abstract

Sixteen elementary students were observed systematically over two entire school days to examine the nature of instruction and academic responding times for LD students during resource room instruction and mainstream classroom instruction. Data were recorded on six categories in 10-second intervals. Results indicated that in the mainstream setting, the nature of instruction and academic responding was similar for LD students and their non-LD classmates. However, LD students received more small group instruction and more teacher approval in the resource room than in the mainstream room, and also engaged in three of seven active academic responses for more time when in the resource room. Yet, overall active academic responding time was low, even in the resource room, averaging just over 29 minutes of a 95-minute time period. Implications of the findings for mainstream and resource room instruction are explored.

Table of Contents

	Page
Introduction	1
Method	4
Subjects	4
Observation System	4
Observers	6
Procedures	7
Observer training	7
Data collection	7
Reliability	8
Data Analysis	10
Results	11
Regular vs. Resource Classroom Times for LD Students	11
Activity	11
Task	12
Teaching structure	12
Teacher location	13
Teacher activity	13
Student response	14
LD vs Non-LD Students During LD Resource Room Time	15
Activity	15
Task	15
Teaching structure	16
Teacher location	16
Teacher activity	17
Student response	17
LD vs Non-LD Students During LD Mainstream Classroom Time	18
Activity	18
Task	19
Teaching structure	19
Teacher location	19
Teacher activity	20
Student response	20
Discussion	20
References	25
Footnotes	27
Tables	28

LD Students' Active Academic Responding in Regular and Resource Classrooms

In studying variables that contribute to students' learning in school, attention has turned away from gross measures to specific indices of the opportunities students have to make active learning responses (cf. Graden, Thurlow, & Ysseldyke, 1982a). Academic responding time has been defined as the time during which a student is attending and making an active academic response such as reading aloud or silently, writing, and asking or answering academic questions. These types of responses are in contrast to task management responses (raising hand, looking for materials, listening, etc.) and inappropriate responses (disruption, looking around, etc.).

Although terminology has varied, several studies have found positive correlations between the amount of time students engage in academic, on-task behaviors and their gains on measures of achievement (Borg, 1980; Cooley & Leinhardt, 1980; Gaver & Richards, 1979; Good & Grouws, 1977; Greenwood, Delquadri, Stanley, Terry, & Hall, 1981; McKinney, Mason, Perkerson, & Clifford, 1975; Stallings, 1975). On the other hand, relationships between achievement and task management responses generally have been insignificant or negative and relationships between achievement and inappropriate responses generally have been negative.

Significant progress has been made in identifying and documenting the importance of active academic responding to the learning of regular students in mainstream education. Only recently has the relationship between learning and students' responses been explored for special populations. In an investigation of both the nature of

instruction (activities, tasks, teaching structures, and the activities and location of the teacher), and the nature of students' responses, Thurlow, Graden, Greener, and Ysseldyke (1982) found that school-identified learning disabled[1] (LD) students apparently received some benefits from being classified as LD. In comparison to non-LD classmates, the LD students were allocated more individual instruction and more teacher approval than their non-LD peers. Further, the LD students engaged in certain academic responses (playing academic games, reading aloud, talking about academics, asking academic questions, and answering academic questions) for greater amounts of time than the non-LD students. However, non-LD students engaged in the academic response of writing for greater amounts of time than LD students, thereby negating any difference in total active academic responding times of the two groups.

One conclusion that might be drawn from the data reported by Thurlow, Graden, et al. (1982) is that the LD students were allocated more individual instruction, more teacher approval, and greater opportunities to engage in certain types of active academic responses during the times when they were in the LD resource room. However, the analyses presented by Thurlow, Graden, et al. compared LD and non-LD students over entire school days; the times spent by LD students in mainstream classes and resource rooms were not separated. Therefore, the conclusion that benefits received by LD students can be attributed to the resource room is inappropriate at this point.

Only one study has attempted to document LD students' responding times within the special classroom. Zigmond, Vallecorsa, and

Leinhardt (1980) found that LD students who were placed within a special classroom for the entire school day engaged in active academic responses such as reading and writing for very small amounts of time. One-third of the students' day within the self-contained classroom consisted of off-task time, and waiting or management responses. These data suggest that special education services provided to the LD student do not increase academic engaged time. However, self-contained classroom placement is not the typical placement for the majority of LD students. In conformance with mandates for the least restrictive placement, most LD students are placed within mainstream classes for part of the day and in resource rooms for the remainder. It is possible that this arrangement, in which the special education teacher sees the LD student for only part of the day, leads to different interaction patterns and requirements of the student than occurs when the teacher is with the student all day (cf. Thurlow, Ysseldyke, Graden, Greener, & Mecklenburg, 1982).

The present study was conducted to compare the nature of instruction and academic responding time for LD students in the mainstream classroom and in the resource room. Further, the nature of instruction and academic responding time for LD students in the resource room was compared to the nature of instruction and academic responding time for non-LD students in the mainstream classroom during the times their LD classmates were in the resource room. This comparison was conducted because resource room instruction typically focuses on the academic activities of reading and math. It is possible that, during reading and math instruction, non-LD students

receive equivalent amounts of individual instruction and teacher approval and engage in the same amounts of active academic responses as LD students. Comparisons also were made between the two groups of students during the times both were in the regular classroom.

Method

Subjects

Eight pairs of LD and non-LD students from eight classrooms in eight elementary schools in a suburban school district served as subjects. The students were in grades three (n=12) and four (n=4). Five of the pairs were males and three were female. The homeroom teachers of these students included three males (1 3rd grade, 2 4th grade) and five females (all 3rd grade). The LD students were receiving services in levels 3 (i.e., resource room instruction for up to ½ day) and 4 (i.e., resource room instruction for more than ½ day but not all day), with scheduled time in the resource room ranging from 30 minutes per day to 225 minutes per day. All teachers and students were volunteer participants in the observational study.

In the selection of subjects, LD students were selected first by using a random numbers table to pick from third and fourth grade students who were on the schools' LD rolls by late fall. A non-LD peer was then selected for each LD student by randomly selecting from the names of same-sex students in the LD students' homerooms.

Observation System

The CISSAR (Code for Instructional Structure and Student Academic Response) observation system was used in this study. The version of the system employed was developed by the Juniper Gardens Children's

Project in Kansas City, Kansas (Greenwood, Delquadri, & Hall, 1978). The system focused the observation on the behavior of one target student (rather than sampling behaviors of several students) and allowed observers to record six event areas: (a) activity (12 codes), (b) task (8 codes), (c) teaching structure (3 codes), (d) teacher location (6 codes), (e) teacher activity (5 codes), and (f) student response (19 codes). Seventeen stop codes also were used to record reasons for termination of observation. Table 1 is a list of the definitions of the event areas and the specific events recorded within each area. Detailed definitions and examples are presented by Thurlow, Graden et al. (1982). Excluding the stop codes, a total of 53 different events could be recorded with the CISSAR system.

Insert Table 1 about here

An interval time sampling technique was used to direct the recording of events. Three event areas were recorded every 10 seconds over the entire school day while the student was in the classroom. Coding was structured into blocks of seven 10-second intervals. During the first 10-second interval, activity, task, and teaching structure were recorded. During each of the next six 10-second intervals, teacher location, teacher activity, and student response were recorded. This pattern was maintained throughout the observation.

An auditory electronic timer attached to a clipboard was used to signal the 10-second intervals. The timer was equipped with an earplug so that only the observer could hear the signal (a short beep

sound). The clipboard was used to hold coding sheets and to provide a hard surface for marking events.

The coding sheets, modeled after those used by the Juniper Gardens Children's Project (Stanley & Greenwood, 1980), were designed at Minnesota's Institute so that they could be read automatically by an optical scanner. To be read correctly by the scanner, the circles on the coding sheet had to be very dark and completely filled. In addition to spaces for coding student identification and start and stop times, each sheet contained three blocks representing 70 seconds each. Each completed sheet represented 3.5 minutes of observation time.

Observers

Eleven individuals served as observers during the present study. Nine of the observers were responsible for the majority of the observations. The other two observers were substitutes who filled in for reasons of sickness, make-up observations, and so on. These substitute observers were Institute staff members who conducted observer training sessions and monitored the regular observers. The regular observers were all females who had been selected from a pool of 50 female applicants who had responded to an ad in a local newspaper. A prerequisite for consideration was that the applicant not have a background in education; the goal was to minimize biases that might be brought to the classroom setting. Additional selection criteria included average or above average reading ability and performance on selected parts of a general office skills test. A personal interview with one of two Institute staff members comprised

the final step of selection.

Of the nine selected observers, two had attended college for at least one year and one had a BA. Two others had completed a business or vocational school program. Previous employment varied greatly, including sales, clerical, foster parent, own business, and social worker. All but two observers had a child or children in elementary or secondary school. Observers did not work in schools in which their children were enrolled.

Procedures

Observer training. Observers were trained in the observation system through the use of an Observer and Trainer's Manual (Stanley & Greenwood, 1980). The manual presented eight units that, according to the authors, were sequenced in terms of the complexity of the recording skills covered. Training required observers to read materials and then practice coding small numbers of events through the use of a variety of other media, including flashcards, overheads, and videotapes. Exercises and quizzes were presented throughout the manual. Mastery (100% correct) of the material in each unit was required before continuing in the training to the next unit.

Training in the system was conducted by four Institute staff members. Two weeks of half-day training sessions were required to cover the material presented in the manual. This was followed by two to three days of practice coding within actual classrooms.

Data collection. The trained educational observers coded activities on either a whole-day (one observer all day) or half-day (one observer for morning, another for afternoon) basis. Typically,

observers did not code continuously for a period of more than two hours because of breaks within the school day. Observations were not conducted during breaks, such as those for lunch, recess, and bathroom. Also, observers did not code during physical education, music, or special assembly programs since the observation system did not apply to these situations. Observers did follow target students when they left their homerooms to go to other classrooms for certain subjects (typically reading and/or mathematics), or when they went to the resource teacher for special instruction. Coding was conducted in these other classrooms in the same manner as in homerooms. Regardless of the physical setting, observers attempted to position themselves to be unobtrusive and to avoid revealing the identity of target students to the target students themselves or to other students.

Each target student was observed for two full days by the trained educational observers. The decision to collect two days of data on each student was based on stability analyses presented by Greenwood et al. (1981), in which they found one day of observation predicting 62% and 92% of the variance for activity and student response, respectively. Student pairs (LD and non-LD) always were observed on the same days; however, an attempt was made to schedule the two days of observation for different days of the week. Typically, these two days were consecutive. All observations (2 days for 16 students) were completed between January and March.

Reliability. Reliability checks were conducted during training and during another observation study that took place over a two-month period immediately preceding this study. These checks were conducted

by the observer pairs within each room; one of the two observers was designated randomly as the reliability observer. This observer stopped observing her target student and coded events on the same student as the other observer in the classroom for approximately 14 minutes (4 pages of observation). During the study, 41 reliability checks were completed.

Two types of reliability were checked: (a) behavioral, and (b) sequential. Behavioral reliability was a measure of observer agreement on a specific event being observed; behavioral reliabilities were calculated for (a) teacher location, (b) teacher activity, and (c) student response. The second type of reliability, sequential reliability, was a measure of observer agreement on the sequence of items; this measure was designed to document that observers were coding in the sequence required by the observation system. According to the CISSAR training manual, the desired levels of reliability were 90% for behavioral reliability and 85% for sequential reliability. Table 2 is a summary of the observers' reliabilities.

Insert Table 2 about here

Because of the desire not to lose observation data on any of the subjects (which occured when the reliability observer stopped to watch the other observer's student), reliability checks were not conducted during the current study, except at the study's onset. At that time, the Institute staff members who had been responsible for training served as reliability observers. It was noted at that time that some

observer drift seemed to have occurred (possibly due to the one-month vacation break between this study and the one immediately preceding it). A special meeting was held to review definitions and clarify where the drift seemed to be occurring (mainly in the area of teacher activity). Then, to maintain adequate levels of reliability throughout the study, meetings were held to discuss coding problems, reliability disagreement, and so on. These were held on a weekly basis for the first two weeks of the study, and then on a bi-weekly basis after that. At the meetings, definitions were reviewed and any disagreements were resolved.

Data Analysis

Total amounts of time and percentages of observed time over the two days of observation for each student comprised the dependent measures in this study. Percentage data were used for correlated *t* test analyses of the activities, tasks, structures, teacher locations, teacher activities, and student responses for the LD students in the regular versus resource rooms. Actual time data were used for independent *t* test analyses of the same variables for the LD students versus non-LD students during the period of time the LD student was in the resource room and during the period of time the LD student was in the regular classroom.

The data presented in the tables in the current report were derived by transforming the actual observational data since the observation system, designed to allow the recording of as much data as possible, required that activity, task, and structure be coded once every 70 seconds while teacher location, teacher activity, and student

response were coded six times every 70 seconds. The transformations produced slight overestimates of the time allocated to each activity, task, and structure, and slight underestimates of the times for teacher location, teacher activity, and student response. The transformed times were not used in data analyses.

Results

Regular vs Resource Classroom Times for LD Students

LD students were observed for an average of approximately 220 minutes (3.7 hrs) each day; the remaining time was not observed because students were at lunch, recess, physical education, music, special assemblies, or bathroom, or were going from one classroom to another. About 43% of the observed time was in the resource room (95 min).

Activity. The percentages of time allocated to activities within regular and resource classrooms for LD students are presented in Table 3. In the resource classroom, the largest percentage of time was allocated to reading; in the regular classroom, the largest percentage of time was allocated to language, followed closely by science and math. Significant differences were found in the amounts of time allocated to three specific academic activities: reading, $t(7)=9.40$, $p=.000$; spelling, $t(7)=2.93$, $p=.022$; and social studies, $t(7)=2.91$, $p=.023$. LD students were allocated a significantly greater percentage of time for reading activities in the resource classroom as compared to the regular classroom, and significantly more time for spelling and social studies activities in the regular classroom than in the regular classroom. Percentages of times allocated to two non-academic

activities also were found to be significantly different, with greater percentages devoted to both business management, $t(7)=3.93$, $p=.006$, and transition, $t(7)=3.92$, $p=.006$, in the regular classroom than in the resource classroom. Despite these differences, the percentage of time devoted to academic activities overall in regular and resource classrooms was not found to differ significantly, $t(7)=2.30$, $p=.055$, nor was the percentage of time devoted to non-academic activities overall, $t(7)=2.30$, $p=.055$.

Insert Table 3 about here

Task. No significant differences were found in the percentages of time allocated to various tasks for LD students during their time in regular and resource classrooms (see Table 4). In both settings, the largest percentages of time were allocated to readers and other media (e.g., films, teaching games).

Insert Table 4 about here

Teaching structure. Percentages of times allocated to entire group, small group, and individual teaching structures for LD students in regular and resource classrooms are presented in Table 5. In the regular classroom, the largest percentage of time was allocated to entire group structures while in the resource classroom, the largest percentage of time was allocated to small group teaching structures. The difference in percentages of times between regular and resource

classrooms was significant for entire group structures, $t(7)=5.84$, $p=.001$, and for small group structures, $t(7)=3.52$, $p=.010$. The LD student received a significantly greater percentage of time in entire group structures in the regular classroom (93.5%) as compared to the resource classroom (22.0%), and a significantly greater percentage of time in small group structures in the resource classroom (48.3%) as compared to the regular classroom (3.5%). The difference in percentages of times allocated to individual structures between regular and resource classrooms (3.0% vs 29.6%) was not statistically significant, $t(7)=2.27$, $p=.058$.

Insert Table 5 about here

Teacher location. No significant differences were found in the percentages of time allocated to various teacher locations for LD students during their time in regular and resource classrooms (see Table 6). In both settings, the largest percentage of time was allocated to the teacher being located among the students.

Insert Table 6 about here

Teacher activity. Table 7 is a list of the five teacher activities that were coded during observations and the percentages of time devoted to each when the LD student was in regular and resource classrooms. In both types of classrooms, the largest percentage of time consisted of the teacher exhibiting no response to the target

student. No significant differences were found between the two settings in the percentage of time allocated to teaching, disapproval, or no response from the teacher. The LD student received a significantly greater percentage of time devoted to other talk in the regular classroom (3.2%) than in the resource classroom (1.6%), $t(7)=3.31$, $p=.013$, and a significantly greater percentage of time receiving approval from the teacher when in the resource classroom (0.6%) as compared to the regular classroom (0.1%), $t(7)=2.80$, $p=.027$.

Insert Table 7 about here

Student response. The average percentages of time LD students engaged in academic responses overall, task management responses overall, and inappropriate responses overall, as well as in each specific response in the two settings are presented in Table 8. In both settings, students engaged in task management responses and specifically, passive responses (e.g., waiting, watching the teacher), for the largest percentages of time. The percentages of time during which the student engaged in academic responses overall was significantly greater in the resource classroom (36.9%; 29.4 min) than in the regular classroom (16.4%; 18.7 min), $t(7)=4.27$, $p=.004$. Specifically, LD students more often engaged in both academic talk, $t(7)=2.93$, $p=.022$, and answering academic questions, $t(7)=3.38$, $p=.012$, while in the resource classroom as compared to the regular classroom.

Insert Table 8 about here

LD students engaged in task management responses overall for a greater percentage of time in the regular classroom (44.8%; 64.3 min) than in the resource classroom (36.3%; 40.1 min), $t(7)=2.84$, $p=.025$. A significant difference also was found for the specific task management response of raising hands, $t(7)=2.66$, $p=.033$; LD students raised their hands for a larger percentage of time in the regular classroom (2.8%) than in the resource classroom (1.5%). No statistically significant differences were found between the two classroom settings for the percentages of time during which students engaged in inappropriate responses.

LD vs Non-LD Students During LD Resource Room Time

LD students were observed for an average of 95 minutes per day in the resource classroom. A non-LD classmate of each LD student was observed in the regular classroom during the same time period.

Activity. The average numbers of minutes per day allocated to each activity are presented in Table 9. No significant differences were found between the times for the LD and non-LD students. Clearly, most time was devoted to academic activities (89 min), particularly reading (63 min).

Insert Table 9 about here

Task. No significant differences were found in the times

allocated to various tasks for LD and non-LD students during the time when the LD students were in the resource classroom (see Table 10). Readers were used by both groups of students for over 20 minutes during that time.

Insert Table 10 about here

Teaching structure. The average numbers of minutes per day allocated to entire group, small group, and individual teaching structures for LD students in the resource classroom and for non-LD students observed in the regular classroom during the same time periods are displayed in Table 11. A significant difference was found in the amount of time allocated to individual teaching structures, $t(14)=2.49$, $p=.026$. LD students in the resource classroom were allocated nearly 25 times as much individual teaching (34.0 min) as non-LD students in the regular classroom during the same time period (1.3 min). During the observed time period, LD students received most instruction in either small groups or in individual teaching structures (84%), whereas non-LD students received nearly all instruction in either small groups or in entire group teaching structures (99%).

Insert Table 11 about here

Teacher location. One statistically significant difference was found in the time allocated to teacher locations (see Table 12); LD

students were allocated more time with the teacher beside them (14.3 min) than were non-LD students (30 sec), $t(14)=2.68$, $p=018$. For both groups of students, most time was allocated to the teacher being located among the students.

Insert Table 12 about here

Teacher activity. Table 13 is a summary of the times allocated to teacher activities during the time when LD students were in the resource classroom. It was found that LD students received significantly more approval (30 sec) than did non-LD students (6 sec), $t(14)=2.44$, $p=.028$, even though the amounts of time for both groups were low. For both LD and non-LD students, most time was spent with the teacher exhibiting no response to the observed student.

Insert Table 13 about here

Student response. LD and non-LD students' engaged times during the time period when LD students were in the resource room are included in Table 14. Both groups were engaged in task management responses for the largest amount of time; no statistically significant differences were found between the two groups in this category.

Insert Table 14 about here

Active academic responses accounted for not quite one-half hour

of the observed time; LD and non-LD students did not differ in the amount of time during which they were engaged in active academic responses overall. However, they did differ in terms of the specific academic responses in which they were engaged. LD students engaged in four responses for greater amounts of time than non-LD students: playing academic games, $t(14)=2.90$, $p=.012$; reading aloud, $t(14)=2.20$, $p=.045$; academic talk, $t(14)=2.54$, $p=.023$; and asking academic questions, $t(14)=2.49$, $p=.026$. The difference in times for reading silently approached significance, $t(14)=2.13$, $p=.051$, with non-LD students engaged in silent reading for more time than LD students.

Students engaged in inappropriate responses for approximately 10 minutes, regardless of their classification as LD or non-LD. No significant differences were found for any of the inappropriate responses.

LD vs Non-LD Students During LD Mainstream Time

LD students were observed within regular classroom settings for an average of 125 minutes (2 hrs 5 min) each day. The non-LD classmates were observed during the same times in the regular classrooms.

Activity. The average numbers of minutes per day allocated to each activity during regular classroom time for both LD and non-LD students are presented in Table 15. For both groups, most time was allocated to language. No significant differences were found in times allocated to an activity or to academic activities overall or non-academic activities overall.

Insert Table 15 about here

Task. No significant differences were found in the times allocated to various tasks for LD and non-LD students during the time when the LD students were in the regular classroom (see Table 16). Readers were used by both groups of students for the greatest amount of time, followed by other media.

Insert Table 16 about here

Teaching structure. The average amounts of time allocated to various teaching structures are presented in Table 17. Clearly, most time was allocated to entire group structures during the time when both of the observed students were in the regular classroom. No significant differences in times emerged.

Insert Table 17 about here

Teacher location. No significant differences were found in the times allocated to various teacher locations for LD and non-LD students during the time they were in the regular classroom (see Table 18). The teacher was located among students for the greatest amount of time (about 40 min). The teacher was beside the observed student for approximately 3 minutes each day.

Insert Table 18 about here

Teacher activity. Average amounts of time allocated to each teacher activity for LD and non-LD students are displayed in Table 19. No significant differences in the times for the two groups of students were found. For both LD and non-LD students, the teacher exhibited no response to the observed student for the greatest amount of time; teaching was the next most frequent teacher activity.

Insert Table 19 about here

Student response. No significant differences between LD and non-LD students were found in the times they were engaged in academic responses overall, task management responses overall, inappropriate responses overall, or in any specific response (see Table 20). Students engaged in task management responses for the greatest amount of time (about 65 min). The average times in which students engaged in academic and inappropriate responses was nearly equal during the time when both students were in the regular classroom.

Insert Table 20 about here

Discussion

The results of the present study indicate that LD students do benefit directly from their placement in a resource room setting for

part of the day. Proportionately, LD students were allocated more small group instruction and more teacher approval in the resource room than in the mainstream classroom. On the other hand, in the mainstream classroom proportionately more time was allocated to entire group structures and other talk than in the resource room. These differences in the nature of instruction in the two settings appeared to have influenced the LD students' opportunities to respond in the two settings. The proportion of time during which the LD student engaged in task management responses, specifically raising hands, was significantly greater in the mainstream classroom than in the resource room. In contrast the proportion of time during which the LD student engaged in active academic responses, specifically academic talk, answering academic questions, and asking academic questions, was significantly greater in the resource room than in the mainstream classroom.

While the above comparisons appear clearly to favor the resource room setting for the LD student, it must also be noted that in the resource classroom the LD students were working on reading and/or math. Since academic activities are likely to promote different instructional tasks and structures as well as opportunities to respond, it was necessary to compare the nature of instruction and responding times of LD students with those of non-LD classmates both (a) during the time the LD student was in the resource room, and (b) during the time both students were in the regular classroom.

Comparisons of the nature of instruction and academic responding times for LD and non-LD students during the time when the LD student

was in the resource classroom (i.e., during reading and/or math) supported the notion that placement in the resource room altered the nature of instruction even though the activity was the same in the two settings. During reading and/or math, LD students in the resource room were allocated significantly more time for individual instruction (34 min vs 1 min), with the teacher located beside them (14 min vs 30 sec), and received significantly more teacher approval (30 sec vs 6 sec) than did non-LD students in the regular classroom during reading and/or math. In terms of opportunities to respond, LD students in the resource room spent more time than non-LD students in the regular classroom engaged in several active academic responses: reading aloud (5 min vs 40 sec), academic talk (4 min vs 40 sec), playing academic games (4 min vs 0 min), and asking academic questions (40 sec vs 10 sec). Yet, in the mainstream classroom setting, there were no differences in the nature of instruction or academic responding for LD and non-LD students.

Some investigations have suggested that LD students in regular classrooms receive significantly more criticism and negative contacts from their teachers than non-LD students (Chapman, Larsen, & Parker, 1979) and fewer response opportunities (Bryan, Wheeler, Felcan, & Henek, 1976). These findings were not corroborated by the present study. In fact, during regular classroom instruction, when both the LD student and the student's classmate were in the regular classroom, no differences were found in the nature of instruction (activity, task, structure, teacher location and activity) or in the students' opportunities to respond. Apparently, regular classroom teachers are

treating students of varying academic levels in their classrooms alike, a finding supported by Greener, Thurlow, Graden, and Ysseldyke (1982). However, this type of equal treatment in the regular classroom does not necessarily occur for students of differing behavioral competencies (cf. Graden, Thurlow, & Ysseldyke, 1982b). Also, it is impossible to know whether equal instruction and opportunities to learn would be found if the LD students were in the regular classroom during reading and/or math.

The findings of two recent observational studies of LD students' opportunities to learn are clarified by the present findings. Thurlow, Graden et al. (1982) found that LD students were allocated significantly more individual instruction and more teacher approval, and that the LD students engaged in five of seven active academic responses for greater amounts of time than their non-LD classmates. In addition, Thurlow, Ysseldyke et al. (1982) found that more severely learning disabled students, who were in resource classrooms for greater portions of the day, also were allocated significantly more individual instruction and teacher approval than less severely learning disabled students. However, no differences were found in opportunities to learn through active academic responding. Whether the differences found in those studies were related to resource room placement was not addressed. The present results suggest that differences that were found indeed were related to resource room placement. Given this, it would be interesting to explore the drop in active academic responding time found for students placed in a special class for the entire day (Thurlow, Ysseldyke et al., 1982).

Previous observational studies consistently have noted the small proportion of the school day during which students engage in active academic responding, usually less than one hour per day. Even during two hours of reading, active academic responding of a typical second-grade student occurred for approximately 20 minutes, just over one-fourth of the reading period (Graden, Thurlow, Ysseldyke, & Algozzine, 1982). In the present study, active academic responding during reading and/or math occurred for an average of 29.4 minutes for LD students in the resource room and 25.6 minutes for non-LD students in the regular classroom, or about 28% of the 95 minutes of reading observed. LD students engaged in specific reading practice (reading aloud or silently) for only 9.0 minutes during this time; non-LD students engaged in these responses for 10.6 minutes during the same time. However, as noted by other investigators, variability among students was great, even for these specific reading responses: one LD student spent an average of just 1.8 minutes per day while another spent an average of 23.6 minutes; one non-LD student spent an average of just 20 seconds per day while another spent an average of 20.0 minutes.

Despite the benefits apparently derived from resource room instruction, one must still question whether the low amount of academic responding time is adequate for improving the skills of LD youngsters, especially given recent conclusions that the amount of reading time is related to the success of reading programs (Samuels, 1981). Recent questioning of the adequacy of instructional time and students' opportunities to learn (cf. Houck & Given, 1981; Sargent, 1981) still are relevant.

References

Borg, W. Time and school learning. In C. Denham & A. Lieberman (Eds.), Time to learn. Washington, D.C.: National Institute of Education, 1980.

Bryan, T. H., Wheeler, R., Felcan, J., & Henek, T. "Come on dummy": An observational study of children's communication. Journal of Learning Disabilities, 1976, 9(10), 661-669.

Chapman, R. B., Larsen, S. C., & Parker, R. M. Interactions of first-grade teachers with learning disordered children. Journal of Learning Disabilities, 1979, 12(4), 20-25.

Cooley, W., & Leinhardt, G. The instructional dimensions study. Educational Evaluation and Policy Analysis, 1980, 2, 7-24.

Gaver, D., & Richards, H. Dimensions of naturalistic observation for the prediction of academic success. Journal of Educational Research, 1979, 72, 123-127.

Graden, J., Thurlow, M. L., & Ysseldyke, J. E. Academic engaged time and its relationship to learning: A review of the literature (Monograph No. 17). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982. (a)

Graden, J., Thurlow, M. L., & Ysseldyke, J. E. Instructional ecology and academic responding time for students at three levels of teacher-perceived behavioral competence (Research Report No. 73). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982. (b)

Graden, J. L., Thurlow, M. L., Ysseldyke, J. E., & Algozzine, B. Instructional ecology and academic responding time for students in different reading groups (Research Report No. 79). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Good, T., & Grouws, D. Teaching effects: A process-product study in 4th grade mathematics classrooms. Journal of Teacher Education, 1977, 28, 49-54.

Greener, J. W., Thurlow, M. L., Graden, J. L., & Ysseldyke, J. E. The educational environment and students' responding times as a function of students' teacher-perceived academic competence (Research Report No. 86). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Greenwood, C. R., Delquadri, J., & Hall, R. V. Code for instructional structure and student academic response: CISSAR. Kansas City, Kan.: Juniper Gardens Children's Project, Bureau of Child Research, University of Kansas, 1978.

Greenwood, C., Delquadri, J., Stanley, S., Terry, B., & Hall, R. Process-product study of relationships among instructional ecology, student response, and academic achievement. Unpublished manuscript, Juniper Gardens Children's Project, 1981.

Houck, C., & Given, B. Status of SLD programs: Indications from a teacher survey. Learning Disability Quarterly, 1981, 4, 320-325.

McKinney, J., Mason, J., Perkerson, K., & Clifford, M. Relationship between classroom behavior and academic achievement. Journal of Educational Psychology, 1975, 67, 198-203.

Samuels, S. J. Characteristics of exemplary reading programs. In J. T. Guthrie (Ed.), Comprehension and teaching: Research reviews. Newark, Del.: International Reading Association, 1981.

Sargent, L. R. Resource teacher time utilization: An observational study. Exceptional Children, 1981, 47, 420-425.

Stallings, J. Implementation and child effects of teaching practices in Follow-Through classrooms. Monographs of the Society for Research in Child Development, 1975, 40 (Serial No. 163).

Stanley, S. O., & Greenwood, C. R. CISSAR: Code for instructional structure and student academic response: Observer's manual. Kansas City, Kan.: Juniper Gardens Children's Project, Bureau of Child Research, University of Kansas, 1980.

Thurlow, M. L., Graden, J., Greener, J. W., & Ysseldyke, J. E. Academic responding time for LD and non-LD students (Research Report No. 72). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Thurlow, M. L., Ysseldyke, J. E., Graden, J., Greener, J. W., & Mecklenburg, C. Academic responding time for LD students receiving different levels of special education services (Research Report No. 78). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Zigmond, N., Vallecorsa, A., & Leinhardt, G. Reading instruction for students with learning disabilities. Topics in Language Disorders, 1980, 1(1), 89-98.

Footnotes

The observational research reported here was part of an extensive project that could not have been completed without the cooperation and help of numerous individuals. Foremost among these were the administrators, teachers, and students in the school district in which the research was conducted. Equally important to the successful completion of the research were the observers; all were committed to providing an accurate, objective picture of the school day. Listed alphabetically, the observers for the present study were: Barbara Flykt, Eileen Mevissen, Donna Miller, Rose Marie Plant, Cheryl Randklev, Judith Rygwall, Yvonne Shafranski, Wendy Studer, and Geraldine Webster. In addition, the assistance of Sandra Christenson during observer training is gratefully acknowledged. The special assistance of Charles Greenwood and Sandra Stanley, University of Kansas, in the implementation of their CISSAR observational system was appreciated greatly, as was the data analysis expertise provided by Bob Algozzine, Matthew McGue, and Jing-Jen Wang. Also essential to the completion of the project were the contributions of psychometric assistants Barbara Anderson, Lisa Boyum, Yetta Levine, and Cathy Walters. The excellent secretarial services provided by Audrey Thurlow and Marilyn Hyatt made the entire research process a success.

[1]Throughout this report, "LD" is used to refer to students labeled LD by the schools. Schools use a variety of approaches in assigning this label.

Table 1

CISSAR Event Areas and Specific Events Coded[a]

Event Area	Specific Events Coded
Activity - type of instruction being provided/established by teacher	R - Reading M - Math S - Spelling H - Handwriting L - Language Sc - Science Ss - Social Studies Ac - Arts/Crafts Ft - Free Time Bm - Class Business/ Management Tn - Transition Ct Can't Tell
Task - curriculum task or verbal instruction mode in which student is expected to engage	Rr - Readers Wb - Workbooks Ws - Worksheets Pp - Paper and Pencil Ll - Listen to Teacher Lecture Om - Other Media Tsd - Teacher-Student Discussion Fp - Fetch/Put Away
Teaching Structure - physical arrangement of student in class	Eg - Entire group Sg - Small group I - Individual
Teacher Position - location of teacher	IF - In Front of Class AD - At Desk AS - Among Students O - Out of Room S - Side B - Back
Teacher Activity - response of teacher to target student	NR - No Response T - Teaching OT - Other Talk A - Approval D - Disapproval
Student Response - behavior in which student is engaged	W - Writing G - Playing Academic Game RA - Reading Aloud RS - Silent Reading TA - Talking About Academics ANQ - Answers Academic Question ASK - Asks Academic Question AT - Passive Response RH - Raising Hand LM - Looking for Materials M - Moves to New Academic Station PA - Play Appropriate DI - Disruption PI - Play Inappropriate IT - Inappropriate Task TNA - Talking About Non-academics IL - Inappropriate Locale LA - Look Around SST - Self-Stimulation

[a]Based on Stanley & Greenwood's (1980) CISSAR: Code for instructional structure and student academic response: Observer's manual. Within the Student Response Event Area, the AT event, which was designated as "Attending" by Stanley and Greenwood, was renamed as "Passive Response" in the present investigation to avoid inappropriate connotations of the responses included within that event.

Table 2

Summary of Reliabilities Calculated During the Study[a]

Reliability	Mean	Range
Behavioral		
Teacher Position	92.5	69-100
Teacher Behavior	94.4	72-100
Student Response	89.0	60-100
Sequential	93.6	85-99

[a]All reliabilities are expressed as percentages.

Table 3

Percentages of Time Allocated to Activities in Regular and Resource Classrooms for LD Students[a]

Activity	Regular	Resource	Sig Level[b]
Academic	75.1	93.8	ns
Reading	5.6	75.2	.000
Math	15.2	11.8	ns
Language	16.8	4.3	ns
Science	16.6	0.0	ns
Social Studies	9.7	0.3	.023
Spelling	6.8	0.9	.022
Handwriting	4.4	1.3	ns
Non-Academic	24.9	6.2	ns
Arts/Crafts	10.2	0.1	ns
Transition	6.1	2.4	.006
Free Time	2.8	3.6	ns
Business Mgmt	5.7	0.1	.006

[a]Percentages are averages within each type of classroom, based on observations of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df=7).

Table 4

Percentages of Time Allocated to Tasks in Regular and Resource Classrooms for LD Students[a]

Task	Regular	Resource	Sig Level[b]
Other Media	25.5	22.9	ns
Readers	21.7	25.3	ns
Workbooks	10.8	19.4	ns
Worksheets	9.3	20.9	ns
Teacher-Stu Disc	20.6	3.5	ns
Paper & Pencil	13.0	4.8	ns
Fetch/Put Away	6.5	3.2	ns
Listen to Lecture	1.9	0.0	ns

[a]Percentages are averages within each type of classroom, based on observations of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df=7).

Table 5

Percentages of Time Allocated to Teaching Structures in Regular and Resource Classrooms for LD Students[a]

Structure	Regular	Resource	Sig Level[b]
Entire Group	93.5	22.0	.001
Small Group	3.5	48.3	.010
Individual	3.0	29.6	ns

[a]Percentages are averages within each type of classroom, based on observations of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df=7).

Table 6

Percentages of Time Allocated to Teacher Locations in Regular and Resource Classrooms for LD Students[a]

Location	Regular	Resource	Sig Level[b]
In Front	23.0	10.9	ns
At Desk	29.7	9.9	ns
Among Students	39.5	60.6	ns
Beside Student	3.0	15.7	ns
Back	4.6	1.9	ns
Out	1.4	1.1	ns

[a]Percentages are averages within each type of classroom, based on observations of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df=7).

Table 7

Percentages of Time Allocated to Teacher Activities in Regular and Resource Classrooms for LD Students[a]

Activity	Regular	Resource	Sig Level[b]
No Response	57.9	61.2	ns
Teaching	37.9	35.9	ns
Other Talk	3.2	1.6	.013
Disapproval	0.9	0.4	ns
Approval	0.1	0.6	.027

[a]Percentages are averages within each type of classroom, based on observations of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df=7).

Table 8

Percentages of Time Spent in Various Responses in Regular and Resource Classrooms for LD Students[a]

Response	Regular	Resource	Sig Level[b]
Academic	16.4	36.9	.004
Writing	10.1	12.0	ns
Read Silently	1.9	6.3	ns
Read Aloud	0.6	6.5	ns
Talk Acad	2.2	4.6	.022
Acad Game	0.9	5.1	ns
Ans Acad Q	0.2	1.5	.012
Ask Acad Q	0.4	0.9	ns
Task Management	60.8	48.5	.025
Passive Response	44.8	36.3	ns
Play Appropriate	6.6	3.4	ns
Look for Materials	3.1	4.4	ns
Move	3.4	2.9	ns
Raise Hand	2.8	1.5	.033
Inappropriate	22.8	14.6	ns
Look Around	10.2	6.8	ns
Talk Non-Acad	3.4	2.9	ns
Play Inappropriate	3.9	2.4	ns
Inappropriate Task	3.5	0.6	ns
Inappropriate Locale	1.5	1.5	ns
Disruption	0.1	0.2	ns
Self Stimulation	0.2	0.1	ns

[a]Percentages are averages within each type of classroom based on observations of eight students for two days each.

[b]Significance levels are from dependent *t* tests (df=7).

Table 9

Times Allocated to Activities for LD and Non-LD Students When LD Students Were in the Resource Classroom[a]

Activity	LD	Non-LD	Sig Level[b]
Academic	89.4	89.1	ns
Reading	64.1	62.4	ns
Math	15.8	18.3	ns
Language	6.1	1.1	ns
Handwriting	2.2	1.8	ns
Spelling	0.9	2.8	ns
Social Studies	0.2	1.5	ns
Science	0.0	1.2	ns
Non-Academic	5.8	4.5	ns
Free Time	3.3	1.8	ns
Transition	2.2	2.5	ns
Business Mgmt	0.1	0.3	ns
Arts/Crafts	0.1	0.0	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 10

Times Allocated to Tasks for LD and Non-LD Students When LD Students Were in the Resource Classroom[a]

Task	LD	Non-LD	Sig Level[b]
Readers	22.0	34.4	ns
Worksheets	22.4	15.2	ns
Other Media	24.9	9.9	ns
Workbooks	14.2	17.6	ns
Paper & Pencil	5.2	7.8	ns
Fetch/Put Away	2.8	3.3	ns
Teacher-Stu Disc	3.6	2.4	ns
Listen to Lecture	0.0	1.0	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 11

Times Allocated to Teaching Structures for LD and Non-LD Students When LD Students Were in the Resource Classroom[a]

Structure	LD	Non-LD	Sig Level[b]
Entire Group	15.0	47.9	ns
Small Group	46.4	43.3	ns
Individual	34.0	1.3	.026

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 12

Times Allocated to Teacher Locations for LD and Non-LD Students When LD Students Were in the Resource Classroom[a]

Location	LD	Non-LD	Sig Level[b]
Among Students	50.2	29.3	ns
At Desk	5.2	22.3	ns
In Front	6.9	18.5	ns
Beside Student	14.3	0.5	.018
Back	1.9	4.0	ns
Out	0.7	3.0	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent t tests (df=14).

Table 13

Times Allocated to Teacher Activities for LD and Non-LD Students When LD Students Were in the Resource Classroom[a]

Activity	LD	Non-LD	Sig Level[b]
No Response	48.0	49.4	ns
Teaching	28.9	25.1	ns
Other Talk	1.2	2.4	ns
Approval	0.5	0.1	.028
Disapproval	0.2	0.3	ns

[a]Times are average number of minutes for one day based on observation of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 14

Times Spent in Various Responses by LD and Non-LD Students When LD Students Were in the Resource Classroom[a]

Response	LD	Non-LD	Sig Level[b]
Academic	29.4	25.6	ns
Writing	10.1	13.6	ns
Read Silently	4.1	9.9	ns
Read Aloud	4.9	0.7	.045
Talk Acad	4.3	0.7	.023
Acad Game	4.0	0.0	.012
Ans Acad Q	1.3	0.5	ns
Ask Acad Q	0.7	0.2	.026
Task Management	40.1	38.5	ns
Passive Response	28.8	32.3	ns
Look for Materials	4.3	2.0	ns
Move	2.5	2.2	ns
Play Appropriate	3.2	0.8	ns
Raise Hand	1.3	1.2	ns
Inappropriate	9.8	13.3	ns
Look Around	4.7	7.1	ns
Talk Non-Acad	2.2	2.9	ns
Play Inappropriate	1.5	1.8	ns
Inappropriate Locale	0.9	1.1	ns
Inappropriate Task	0.3	0.2	ns
Disruption	0.1	0.1	ns
Self Stimulation	0.1	0.1	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 15

Times Allocated to Activities for LD and Non-LD Students When LD Students Were in the Regular Classroom[a]

Activity	LD	Non-LD	Sig Level[b]
Academic	99.4	105.8	ns
Language	25.6	24.9	ns
Math	23.6	10.0	ns
Science	15.0	13.1	ns
Social Studies	10.8	12.8	ns
Spelling	10.1	10.6	ns
Handwriting	6.2	8.7	ns
Reading	8.1	6.7	ns
Non-Academic	23.6	24.4	ns
Transition	6.9	8.2	ns
Business Mgmt	6.9	8.1	ns
Arts/Crafts	6.3	5.4	ns
Free Time	3.4	2.8	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent t tests (df=14).

Table 16

Times Allocated to Tasks for LD and Non-LD Students When LD Students Were in the Regular Classroom[a]

Task	LD	Non-LD	Sig Level[b]
Readers	31.6	37.0	ns
Other Media	21.0	18.1	ns
Paper & Pencil	18.7	17.6	ns
Teacher-Stu Disc	17.6	16.3	ns
Workbooks	16.4	13.0	ns
Worksheets	10.8	14.6	ns
Fetch/Put Away	7.7	10.3	ns
Listen to Lecture	2.7	3.2	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 17

Times Allocated to Teaching Structures for LD and Non-LD Students When LD Students Were in the Regular Classroom[a]

Structure	LD	Non-LD	Sig Level[b]
Entire Group	115.5	126.1	ns
Small Group	5.0	2.5	ns
Individual	3.3	1.5	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent t tests (df=14).

Table 18

Times Allocated to Teacher Locations for LD and Non-LD Students When LD Students Were in the Regular Classroom[a]

Location	LD	Non-LD	Sig Level[b]
Among Students	42.8	37.9	ns
At Desk	27.5	35.4	ns
In Front	21.2	22.8	ns
Back	5.2	8.1	ns
Beside Student	3.5	2.5	ns
Out	1.4	1.3	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent t tests (df=14).

Table 19

Times Allocated to Teacher Activities for LD and Non-LD Students When LD Students Were in the Regular Classroom[a]

Activity	LD	Non-LD	Sig Level[b]
No Response	56.7	56.6	ns
Teaching	41.4	45.2	ns
Other Talk	3.4	5.6	ns
Disapproval	0.9	0.5	ns
Approval	0.1	0.1	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent *t* tests (df=14).

Table 20

Times Spent in Various Responses by LD and Non-LD Students When LD Students Were in the Regular Classroom[a]

Response	LD	Non-LD	Sig Level[b]
Academic	18.7	24.9	ns
Writing	12.3	19.5	ns
Read Silently	2.0	2.9	ns
Talk Acad	2.3	1.2	ns
Read Aloud	0.7	0.4	ns
Acad Game	0.8	0.3	ns
Ans Acad Q	0.3	0.3	ns
Ask Acad Q	0.4	0.2	ns
Task Management	64.3	65.2	ns
Passive Response	49.2	52.7	ns
Play Appropriate	6.0	4.2	ns
Move	3.3	3.6	ns
Look for Materials	2.9	3.2	ns
Raise Hand	3.0	1.6	ns
Inappropriate	21.1	17.7	ns
Look Around	10.8	8.3	ns
Talk Non-Acad	3.8	4.2	ns
Play Inappropriate	3.6	2.7	ns
Inappropriate Locale	1.1	2.0	ns
Inappropriate Task	1.5	0.2	ns
Self Stimulation	0.2	0.1	ns
Disruption	0.1	0.0	ns

[a]Times are average number of minutes for one day based on observations of eight LD and eight non-LD students for two days each.

[b]Significance levels are from independent t tests (df=14).

PUBLICATIONS

Institute for Research on Learning Disabilities
University of Minnesota

The Institute is not funded for the distribution of its publications. Publications may be obtained for $3.00 per document, a fee designed to cover printing and postage costs. Only checks and money orders payable to the University of Minnesota can be accepted. All orders must be prepaid.

Requests should be directed to: Editor, IRLD, 350 Elliott Hall; 75 East River Road, University of Minnesota, Minneapolis, MN 55455.

Ysseldyke, J. E. Assessing the learning disabled youngster: The state of the art (Research Report No. 1). November, 1977.

Ysseldyke, J. E., & Regan, R. R. Nondiscriminatory assessment and decision making (Monograph No. 7). February, 1979.

Foster, G., Algozzine, B., & Ysseldyke, J. Susceptibility to stereotypic bias (Research Report No. 3). March, 1979.

Algozzine, B. An analysis of the disturbingness and acceptability of behaviors as a function of diagnostic label (Research Report No. 4). March, 1979.

Algozzine, B., & McGraw, K. Diagnostic testing in mathematics: An extension of the PIAT? (Research Report No. 5). March, 1979.

Deno, S. L. A direct observation approach to measuring classroom behavior: Procedures and application (Research Report No. 6). April, 1979.

Ysseldyke, J. E., & Mirkin, P. K. Proceedings of the Minnesota roundtable conference on assessment of learning disabled children (Monograph No. 8). April, 1979.

Somwaru, J. P. A new approach to the assessment of learning disabilities (Monograph No. 9). April, 1979.

Algozzine, B., Forgnone, C., Mercer, C. D., & Trifiletti, J. J. Toward defining discrepancies for specific learning disabilities: An analysis and alternatives (Research Report No. 7). June, 1979.

Algozzine, B. The disturbing child: A validation report (Research Report No. 8). June, 1979.

Note: Monographs No. 1 - 6 and Research Report No. 2 are not available for distribution. These documents were part of the Institute's 1979-1980 continuation proposal, and/or are out of print.

Ysseldyke, J. E., Algozzine, B., Regan, R., & Potter, M. Technical adequacy of tests used by professionals in simulated decision making (Research Report No. 9). July, 1979.

Jenkins, J. R., Deno, S. L., & Mirkin, P. K. Measuring pupil progress toward the least restrictive environment (Monograph No. 10). August, 1979.

Mirkin, P. K., & Deno, S. L. Formative evaluation in the classroom: An approach to improving instruction (Research Report No. 10). August, 1979.

Thurlow, M. L., & Ysseldyke, J. E. Current assessment and decision-making practices in model programs for the learning disabled (Research Report No. 11). August, 1979.

Deno, S. L., Chiang, B., Tindal, G., & Blackburn, M. Experimental analysis of program components: An approach to research in CSDC's (Research Report No. 12). August, 1979.

Ysseldyke, J. E., Algozzine, B., Shinn, M., & McGue, M. Similarities and differences between underachievers and students labeled learning disabled: Identical twins with different mothers (Research Report No. 13). September, 1979.

Ysseldyke, J., & Algozzine, R. Perspectives on assessment of learning disabled students (Monograph No. 11). October, 1979.

Poland, S. F., Ysseldyke, J. E., Thurlow, M. L., & Mirkin, P. K. Current assessment and decision-making practices in school settings as reported by directors of special education (Research Report No. 14). November, 1979.

McGue, M., Shinn, M., & Ysseldyke, J. Validity of the Woodcock-Johnson psycho-educational battery with learning disabled students (Research Report No. 15). November, 1979.

Deno, S., Mirkin, P., & Shinn, M. Behavioral perspectives on the assessment of learning disabled children (Monograph No. 12). November, 1979.

Sutherland, J. H., Algozzine, B., Ysseldyke, J. E., & Young, S. What can I say after I say LD? (Research Report No. 16). December, 1979.

Deno, S. L., & Mirkin, P. K. Data-based IEP development: An approach to substantive compliance (Monograph No. 13). December, 1979.

Ysseldyke, J., Algozzine, B., Regan, R., & McGue, M. The influence of test scores and naturally-occurring pupil characteristics on psycho-educational decision making with children (Research Report No. 17). December, 1979.

Algozzine, B., & Ysseldyke, J. E. Decision makers' prediction of students' academic difficulties as a function of referral information (Research Report No. 18). December, 1979.

Ysseldyke, J. E., & Algozzine, B. Diagnostic classification decisions as a function of referral information (Research Report No. 19). January, 1980.

Deno, S. L., Mirkin, P. K., Chiang, B., & Lowry, L. Relationships among simple measures of reading and performance on standardized achievement tests (Research Report No. 20). January, 1980.

Deno, S. L., Mirkin, P. K., Lowry, L., & Kuehnle, K. Relationships among simple measures of spelling and performance on standardized achievement tests (Research Report No. 21). January, 1980.

Deno, S. L., Mirkin, P. K., & Marston, D. Relationships among simple measures of written expression and performance on standardized achievement tests (Research Report No. 22). January, 1980.

Mirkin, P. K., Deno, S. L., Tindal, G., & Kuehnle, K. Formative evaluation: Continued development of data utilization systems (Research Report No. 23). January, 1980.

Deno, S. L., Mirkin, P. K., Robinson, S., & Evans, P. Relationships among classroom observations of social adjustment and sociometric rating scales (Research Report No. 24). January, 1980.

Thurlow, M. L., & Ysseldyke, J. E. Factors influential on the psychoeducational decisions reached by teams of educators (Research Report No. 25). February, 1980.

Ysseldyke, J. E., & Algozzine, B. Diagnostic decision making in individuals susceptible to biasing information presented in the referral case folder (Research Report No. 26). March, 1980.

Thurlow, M. L., & Greener, J. W. Preliminary evidence on information considered useful in instructional planning (Research Report No. 27). March, 1980.

Ysseldyke, J. E., Regan, R. R., & Schwartz, S. Z. The use of technically adequate tests in psychoeducational decision making (Research Report No. 28). April, 1980.

Richey, L., Potter, M., & Ysseldyke, J. Teachers' expectations for the siblings of learning disabled and non-learning disabled students: A pilot study (Research Report No. 29). May, 1980.

Thurlow, M. L., & Ysseldyke, J. E. Instructional planning: Information collected by school psychologists vs. information considered useful by teachers (Research Report No. 30). June, 1980.

Algozzine, B., Webber, J., Campbell, M., Moore, S., & Gilliam, J. Classroom decision making as a function of diagnostic labels and perceived competence (Research Report No. 31). June, 1980.

Ysseldyke, J. E., Algozzine, B., Regan, R. R., Potter, M., Richey, L., & Thurlow, M. L. Psychoeducational assessment and decision making: A computer-simulated investigation (Research Report No. 32). July, 1980.

Ysseldyke, J. E., Algozzine, B., Regan, R. R., Potter, M., & Richey, L. Psychoeducational assessment and decision making: Individual case studies (Research Report No. 33). July, 1980.

Ysseldyke, J. E., Algozzine, B., Regan, R., Potter, M., & Richey, L. Technical supplement for computer-simulated investigations of the psychoeducational assessment and decision-making process (Research Report No. 34). July, 1980.

Algozzine, B., Stevens, L., Costello, C., Beattie, J., & Schmid, R. Classroom perspectives of LD and other special education teachers (Research Report No. 35). July, 1980.

Algozzine, B., Siders, J., Siders, J., & Beattie, J. Using assessment information to plan reading instructional programs: Error analysis and word attack skills (Monograph No. 14). July, 1980.

Ysseldyke, J., Shinn, M., & Epps, S. A comparison of the WISC-R and the Woodcock-Johnson Tests of Cognitive Ability (Research Report No. 36). July, 1980.

Algozzine, B., & Ysseldyke, J. E. An analysis of difference score reliabilities on three measures with a sample of low achieving youngsters (Research Report No. 37). August, 1980.

Shinn, M., Algozzine, B., Marston, D., & Ysseldyke, J. A theoretical analysis of the performance of learning disabled students on the Woodcock-Johnson Psycho-Educational Battery (Research Report No. 38). August, 1980.

Richey, L. S., Ysseldyke, J., Potter, M., Regan, R. k., & Greener, J. Teachers' attitudes and expectations for siblings of learning disabled children (Research Report No. 39). August, 1980.

Ysseldyke, J. E., Algozzine, B., & Thurlow, M. L. (Eds.). A naturalistic investigation of special education team meetings (Research Report No. 40). August, 1980.

Meyers, B., Meyers, J., & Deno, S. Formative evaluation and teacher decision making: A follow-up investigation (Research Report No. 41). September, 1980.

Fuchs, D., Garwick, D. R., Featherstone, N., & Fuchs, L. S. On the determinants and prediction of handicapped children's differential test performance with familiar and unfamiliar examiners (Research Report No. 42). September, 1980.

Algozzine, B., & Stoller, L. Effects of labels and competence on teachers' attributions for a student (Research Report No. 43). September, 1980.

Ysseldyke, J. E., & Thurlow, M. L. (Eds.). The special education assessment and decision-making process: Seven case studies (Research Report No. 44). September, 1980.

Ysseldyke, J. E., Algozzine, B., Potter, M., & Regan, R. A descriptive study of students enrolled in a program for the severely learning disabled (Research Report No. 45). September, 1980.

Marston, D. Analysis of subtest scatter on the tests of cognitive ability from the Woodcock-Johnson Psycho-Educational Battery (Research Report No. 46). October, 1980.

Algozzine, B., Ysseldyke, J. E., & Shinn, M. Identifying children with learning disabilities: When is a discrepancy severe? (Research Report No. 47). November, 1980.

Fuchs, L., Tindal, J., & Deno, S. Effects of varying item domain and sample duration on technical characteristics of daily measures in reading (Research Report No. 48). January, 1981.

Marston, D., Lowry, L., Deno, S., & Mirkin, P. An analysis of learning trends in simple measures of reading, spelling, and written expression: A longitudinal study (Research Report No. 49). January, 1981.

Marston, D., & Deno, S. The reliability of simple, direct measures of written expression (Research Report No. 50). January, 1981.

Epps, S., McGue, M., & Ysseldyke, J. E. Inter-judge agreement in classifying students as learning disabled (Research Report No. 51). February, 1981.

Epps, S., Ysseldyke, J. E., & McGue, M. Differentiating LD and non-LD students: "I know one when I see one" (Research Report No. 52). March, 1981.

Evans, P. R., & Peham, M. A. S. Testing and measurement in occupational therapy. A review of current practice with special emphasis on the Southern California Sensory Integration Tests (Monograph No. 15). April, 1981.

Fuchs, L., Wesson, C., Tindal, G., & Mirkin, P. Teacher efficiency in continuous evaluation of IEP goals (Research Report No. 53). June, 1981.

Fuchs, D., Featherstone, N., Garwick, D. R., & Fuchs, L. S. The importance of situational factors and task demands to handicapped children's test performance (Research Report No. 54). June, 1981.

Tindal, G., & Deno, S. L. Daily measurement of reading: Effects of varying the size of the item pool (Research Report No. 55). July, 1981.

Fuchs, L. S., & Deno, S. L. A comparison of teacher judgment, standardized tests, and curriculum-based approaches to reading placement (Research Report No. 56). August, 1981.

Fuchs, L., & Deno, S. The relationship between curriculum-based mastery measures and standardized achievement tests in reading (Research Report No. 57). August, 1981.

Christenson, S., Graden, J., Potter, M., & Ysseldyke, J. Current research on psychoeducational assessment and decision making: Implications for training and practice (Monograph No. 16). September, 1981.

Christenson, S., Ysseldyke, J., & Algozzine, B. Institutional constraints and external pressures influencing referral decisions (Research Report No. 58). October, 1981.

Fuchs, L., Fuchs, D., & Deno, S. Reliability and validity of curriculum-based informal reading inventories (Research Report No. 59). October, 1981.

Algozzine, B., Christenson, S., & Ysseldyke, J. Probabilities associated with the referral-to-placement process (Research Report No. 60). November, 1981.

Tindal, G., Fuchs, L. Christenson, S., Mirkin, P., & Deno, S. The relationship between student achievement and teacher assessment of short- or long-term goals (Research Report No. 61). November, 1981.

Mirkin, P., Fuchs, L., Tindal, G., Christenson, S., & Deno, S. The effect of IEP monitoring strategies on teacher behavior (Research Report No. 62). December, 1981.

Wesson, C., Mirkin, P., & Deno, S. Teachers' use of self instructional materials for learning procedures for developing and monitoring progress on IEP goals (Research Report No. 63). January, 1982.

Fuchs, L., Wesson, C., Tindal, G., Mirkin, P., & Deno, S. Instructional changes, student performance, and teacher preferences: The effects of specific measurement and evaluation procedures (Research Report No. 64). January, 1982.

Potter, M., & Mirkin, P. Instructional planning and implementation practices of elementary and secondary resource room teachers: Is there a difference? (Research Report No. 65). January, 1982.

Thurlow, M. L., & Ysseldyke, J. E. Teachers' beliefs about LD students (Research Report No. 66). January, 1982.

Graden, J., Thurlow, M. L., & Ysseldyke, J. E. Academic engaged time and its relationship to learning: A review of the literature (Monograph No. 17). January, 1982.

King, R., Wesson, C., & Deno, S. Direct and frequent measurement of student performance: Does it take too much time? (Research Report No. 67). February, 1982.

Greener, J. W., & Thurlow, M. L. Teacher opinions about professional education training programs (Research Report No. 68). March, 1982.

Algozzine, B., & Ysseldyke, J. Learning disabilities as a subset of school failure: The oversophistication of a concept (Research Report No. 69). March, 1982.

Fuchs, D., Zern, D. S., & Fuchs, L. S. A microanalysis of participant behavior in familiar and unfamiliar test conditions (Research Report No. 70). March, 1982.

Shinn, M. R., Ysseldyke, J., Deno, S., & Tindal, G. A comparison of psychometric and functional differences between students labeled learning disabled and low achieving (Research Report No. 71). March, 1982.

Thurlow, M. L. Graden, J., Greener, J. W., & Ysseldyke, J. E. Academic responding time for LD and non-LD students (Research Report No. 72). April, 1982.

Graden, J., Thurlow, M., & Ysseldyke, J. Instructional ecology and academic responding time for students at three levels of teacher-perceived behavioral competence (Research Report No. 73). April, 1982.

Algozzine, B., Ysseldyke, J., & Christenson, S. The influence of teachers' tolerances for specific kinds of behaviors on their ratings of a third grade student (Research Report No. 74). April, 1982.

Wesson, C., Deno, S., & Mirkin, P. Research on developing and monitoring progress on IEP goals: Current findings and implications for practice (Monograph No. 18). April, 1982.

Mirkin, P., Marston, D., & Deno, S. L. Direct and repeated measurement of academic skills: An alternative to traditional screening, referral, and identification of learning disabled students (Research Report No. 75). May, 1982.

Algozzine, B., Ysseldyke, J., Christenson, S., & Thurlow, M. Teachers' intervention choices for children exhibiting different behaviors in school (Research Report No. 76). June, 1982.

Tucker, J., Stevens, L. J., & Ysseldyke, J. E. Learning disabilities: The experts speak out (Research Report No. 77). June, 1982.

Thurlow, M. L., Ysseldyke, J. E., Graden, J., Greener, J. W., & Mecklenberg, C. Academic responding time for LD students receiving different levels of special education services (Research Report No. 78). June, 1982.

Graden, J. L., Thurlow, M. L., Ysseldyke, J. E., & Algozzine, B. Instructional ecology and academic responding time for students in different reading groups (Research Report No. 79). July, 1982.

Mirkin, P. K., & Potter, M. L. A survey of program planning and implementation practices of LD teachers (Research Report No. 80). July, 1982.

Fuchs, L. S., Fuchs, D., & Warren, L. M. Special education practice in evaluating student progress toward goals (Research Report No. 81). July, 1982.

Kuehnle, K., Deno, S. L., & Mirkin, P. K. Behavioral measurement of social adjustment: What behaviors? What setting? (Research Report No. 82). July, 1982.

Fuchs, D., Dailey, Ann Madsen, & Fuchs, L. S. Examiner familiarity and the relation between qualitative and quantitative indices of expressive language (Research Report No. 83). July, 1982.

Videen, J., Deno, S., & Marston, D. Correct word sequences: A valid indicator of proficiency in written expression (Research Report No. 84). July, 1982.

Potter, M. L. Application of a decision theory model to eligibility and classification decisions in special education (Research Report No. 85). July, 1982.

Greener, J. E., Thurlow, M. L., Graden, J. L., & Ysseldyke, J. E. The educational environment and students' responding times as a function of students' teacher-perceived academic competence (Research Report No. 86). August, 1982.

Deno, S., Marston, D., Mirkin, P., Lowry, L., Sindelar, P., & Jenkins, J. The use of standard tasks to measure achievement in reading, spelling, and written expression: A normative and developmental study (Research Report No. 87). August, 1982.

Skiba, R., Wesson, C., & Deno, S. L. The effects of training teachers in the use of formative evaluation in reading: An experimental-control comparison (Research Report No. 88). September, 1982.

Martson, D., Tindal, G., & Deno, S. L. Eligibility for learning disability services: A direct and repeated measurement approach (Research Report No. 89). September, 1982.

Thurlow, M. L., Ysseldyke, J. E., & Graden, J. L. LD students' active academic responding in regular and resource classrooms (Research Report No. 90). September, 1982.